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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,763	05/15/2007	Xiuquan Mei	30884/42244	8702
4743 7590 08/13/2009 MARSHALL, GERSTEIN & BORUN LLP 233 SOUTH WACKER DRIVE 6300 SEARS TOWER CHICAGO, IL 60606-6357			EXAMINER MINSKEY, JACOB T	
			ART UNIT 1791	PAPER NUMBER
			MAIL DATE 08/13/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/583,763

**Applicant(s)**

MEI ET AL.

**Examiner**

JACOB T. MINSKEY

**Art Unit**

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 1-11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-85/86)  
Paper No(s)/Mail Date 06/08/2007
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 1-10 are objected to because of the following informalities.
2. There is not a designation of claim "1." It is clear that the top paragraphs in the "we claim" page describe the first claim, but it is not clearly listed.
3. Additionally, MPEP 608.01() states that "the present Office practice is to insist that each claim must be the object of a sentence starting with "I (or we) claim," "The invention claimed is" (or the equivalent)." Claims 1, 2, 3, and 10 are all in paragraph form that consists of multiple sentences. Please correct to standard USPTO format for the claims. Appropriate correction is required.
4. Claims 2-11 are objected to due to their dependency of claim 1.
5. Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 2 reiterates that the invention contains non-wood and wood materials (see 112 rejection of claim 2 below). For purposes of continued examination all examples following "such as" will not be considered and only the standard definition of non-wood and wood.
6. Claim 9 is objected to because it is unclear whether the provided concentrations are in regards to the total pulp concentration or the concentration of a diluted additive.

7. Claim 10 is objected to because Step (B) does not provide a further positive limitation of the process; it only describes what inherently occurs during the oxidation process of freeing the ligands using oxygen or ozone. This step will held to inherently read on the process.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are narrative in form and replete with indefinite language. The steps which make up the method must be clearly and positively identified. The method steps must be organized and correlated in such a manner as to present a complete operative method. The claims must be in one sentence form only. Note the format of the claims in the patent(s) cited.

10. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required

feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 1 recites the broad recitation active oxygen, and the claim also recites oxygen gas or hydrogen peroxide, which is the narrower statement of the range/limitation. This same argument stands for the active oxygen “B” limitation.

11. Claim 1 recites the limitation “the active oxygen A” (and B). There is insufficient antecedent basis for this limitation in the claim.

12. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: how the active oxygen A can grind the oxidizing materials. It is unclear to the Examiner how the addition of hydrogen peroxide can grind cellulose.

13. Additionally, claim 1 is indefinite for failing to particularly point out and distinctly claim the subject matter of the claim because the entire process is presented in the alternative (claim 1 line 4). As the claim is currently written, none of steps A-D are required for the process, they simple “can be” performed. The only positive limitation presented is the preamble that states the invention is a clean pulping process.

14. **For the purposes of further examination, the Examiner will search for a pulping process that includes the steps of pre-treating, treating the pulp with hydrogen peroxide or oxygen gas, treating the pulp with ozone or an oxygen based radical, concentrating through**

**some means, and refining/pulping/beating to form the pulp as the positive limitations for claim 1.**

15. Claims 2-11 are rejected under 112 2<sup>nd</sup> due to their dependency from claim 1.
16. Regarding claim 2, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).
17. The term "best" in claims 6 and 8 is a relative term which renders the claim indefinite. The term "best" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term "best" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention or just a preferred description.
18. Claim 10 recites the limitation "the disc refiner". There is insufficient antecedent basis for this limitation in the claim.

#### ***Claim Rejections - 35 USC § 102***

19. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**20. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Goodell et al, US Patent Publication 2003/0186036.**

21. Regarding claim 1, Goodell teaches pulping lignocelluloses material composites that contain both wood and non-wood [0114-0119] in a process that includes treatment with hydrogen peroxide [0003 and 0023 and 0103], metal ions (iron, see abstract and [0022 and 0058 and 0095]), metal ion ligands (the Examiner is understanding this to read on chelating agents like EDTA [0021]), and ozone [0103]; then refining the pulp in a disc refiner [0162] and finally concentrating and beating the pulp (these are inherent properties to the pulping process to utilize the pulp for the desired end product, also taught as vacuum blowing and pressing in the methods provided by examples).

22. Regarding claim 2, Goodell further teaches that non-wood and wood materials are utilized [0114-0119].

23. Regarding claim 3, Goodell further teaches that the metal ion is Fe II+ [0195] and EDTA as the ligand [0021].

***Claim Rejections - 35 USC § 102/- 35 USC § 103***

24. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

26. **Claim 11 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Goodell et al, US Patent Publication 2003/0186036.**

27. Regarding claim 11, this claim is a product by process claim, see MPEP § 2113. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself (i.e., differences in product characteristics), and not on its method of production. In the present instance, all that is claimed is a pulp, which is shown by Goodell [0118].

#### ***Claim Rejections - 35 USC § 103***

28. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

29. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

30. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**31. Claims 4-9 rejected under 35 U.S.C. 103(a) as being unpatentable over Goodell et al, US Patent Publication 2003/0186036.**

32. Regarding claims 4-9, Goodell further teaches that the pH is held between 1-4 ([0106] teaches 1-6 preferably 4.5) and provides molar ratios of additive agents to oxygen materials and additives to pulp, but does not provide details in the same unit or explicitly in the same manner as the instant application. The teachings of Goodell that the pH of the system is important and the ratio of oxidizing materials to other additives and total amount of material in the pulp would have motivated one of ordinary skill in the art to optimize these variables because it has been held that determining the optimum range of relevant process parameters through routine experimentation and knowledge requires only routine skill in the art (In re Aller, USPQ 233, SSPA 1955).

**33. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goodell et al, US Patent Publication 2003/0186036 in view of Nimz et al, USP 5,074,960.**

34. Regarding claim 10, Goodell remains as applied in claim 1 teaching the use of a disc refiner (step A) in the pulping process (step B), but does not detail a water purifying and recirculation system to be used in the process, only a sludge recycling system (Table 1).

35. In the same field of endeavor of utilizing ozone and oxygen based treatments in the pulping method, Nimz teaches purifying and recirculating the processing liquid (see abstract and column 6 lines 39-50). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a fluid clarification and recirculation system for the benefit of recovering chemicals and reduce material consumption as well as improving environmental concerns for the plant.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JACOB T. MINSKEY whose telephone number is (571)270-7003. The examiner can normally be reached on Monday to Friday 7:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JTM

/Eric Hug/  
Primary Examiner, Art Unit 1791